

CLAIMS

What is claimed is:

- 1 1. A method for aggregating at least two of a plurality of physical lines within a network  
2 comprising a plurality of nodes, the method comprising:  
3 determining status information for at least two of said plurality of physical  
4 lines connecting a first node to a second node; and  
5 associating at least two of said plurality of physical lines with one another to  
6 create a first aggregated link.
- 1 2. The method of Claim 1 wherein the first node is a sub network connection network  
2 element.
- 1 3. The method of Claim 2 wherein the sub network connection network element is a sub  
2 network connection switch.
- 1 4. The method of Claim 1 comprising the additional step of associating status  
2 information with said first aggregated link.
- 1 5. The method of Claim 4 comprising the additional step of transmitting the status  
2 information of the first aggregated link to said second node.
- 1 6. The method of Claim 1 wherein said status information for each of said plurality of  
2 physical lines includes information regarding data transmission bandwidth for  
3 transferring data between said first node and said second node.

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1 7. The method of Claim 4 wherein said status information of said first aggregated link  
2 includes a maximum available data transmission bandwidth based upon the status  
3 information of each of said plurality of physical lines associated with said first  
4 aggregated link.

1 8. The method of Claim 4 wherein said status information of said first aggregated link  
2 includes a class of service based upon the status information of each of said plurality  
3 of physical lines associated with said first aggregated link.

1 9. The method of Claim 1 further comprising the step of automatically associating at  
2 least two of said plurality of said physical lines with the first aggregated link.

1 10. The method of Claim 1 further comprising the step of associating at least two of said  
2 plurality of said physical lines, based upon at least one predetermined criteria of said  
3 status information, with the first aggregated link.

1 11. The method of Claim 1 further comprising the step of associating at least two of said  
2 plurality of said physical lines, based upon a class of service associated with said  
3 status information, with the first aggregated link.

1 12. The method of Claim 1 further comprising the step of reassociating one of said  
2 plurality of physical lines from the first aggregated link to a second aggregated link.

1 13. The method of Claim 1 further comprising the step of designating which of said  
2 plurality of physical lines associated with said first aggregated link transmits data to  
3 said second node.

1 14. The method of Claim 1 wherein at least one of said plurality of physical lines includes  
2 optical fiber.

1 15. A computer-readable medium carrying one or more sequences of instructions, wherein  
2 execution of the one or more sequences of instructions by one or more processors  
3 causes the one or more processors to perform the steps of:

4 determining status information for at least two of said plurality of physical  
5 lines connecting a first node to a second node; and  
6 associating at least two of said plurality of physical lines with one another to  
7 create a first aggregated link.

1 16. The computer-readable medium of Claim 15 wherein the first node is a sub network  
2 connection network element.

1 17. The computer-readable medium of Claim 15 wherein the sub network connection  
2 network element is a sub network connection switch.

1 18. The computer-readable medium of Claim 15 further comprising the step associating  
2 status information with said first aggregated link.

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- 1 19. The computer-readable medium of Claim 18 comprising the additional step of  
2 transmitting the status information of the first aggregated link to said second node.
- 1 20. The computer-readable medium of Claim 15 wherein said status information for each  
2 of said plurality of physical lines includes information regarding data transmission  
3 bandwidth for transferring data between said first node and said second node.
- 1 21. The computer-readable medium of Claim 18 wherein said status information of said  
2 first aggregated link includes a maximum available data transmission bandwidth based  
3 upon the status information of each of said plurality of physical lines associated with  
4 said first aggregated link.
- 1 22. The computer-readable medium of Claim 18 wherein said status information of said  
2 first aggregated link includes a class of service based upon the status information of  
3 each of said plurality of physical lines associated with said first aggregated link.
- 4 23. The computer-readable medium of Claim 15 further comprising the step of  
5 automatically associating at least two of said plurality of said physical lines with the  
6 first aggregated link.
- 1 24. The computer-readable medium of Claim 15 wherein said status information of said  
2 first aggregated link includes a class of service based upon the status information of  
3 each of said plurality of physical lines associated with said first aggregated link.

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1 25. The computer-readable medium of Claim 15 further comprising the step of associating  
2 at least two of said plurality of said physical lines, based upon one predetermined  
3 criteria of said status information, with the first aggregated link.

1 26. The computer-readable medium of Claim 15 further comprising the step of  
2 reassociating one of said plurality of physical lines from the first aggregated link to a  
3 second aggregated link.

1 27. The computer-readable medium of Claim 15 further comprising the step of designating  
2 which of said plurality of physical lines associated with said first aggregated link  
3 transmits data to said second node.

1 28. The computer-readable medium of Claim 15 wherein at least one of said plurality of  
2 physical lines includes optical fiber.

1 29. A method implemented for aggregating at least two of a plurality of physical lines  
2 within a network, the method comprising:  
3 transmitting information identifying a first node;  
4 transmitting status information associated with at least two of the plurality of  
5 physical lines coupled to the first node; and  
6 requesting the aggregation of the at least two of the plurality of physical lines  
7 coupled to the first node.

1 30. A method implemented for aggregating at least two of a plurality of physical lines  
2 within a network, the method comprising:  
3 receiving information identifying a first node;  
4 receiving status information associated with at least two of the plurality of  
5 physical lines coupled to the first node; and  
6 aggregating at least two of the plurality of physical lines coupled to the first  
7 node.

1 31. A method of claim 30 wherein said aggregating is in response to a request for  
2 aggregation.